

Joint Testimony to the Little Hoover Commission

From the Governor's Office, California Energy Commission, California Independent System Operator, and California Public Utilities Commission

Rewiring California: Integrating Agendas for Energy Reform, December 2012 Report

April 11, 2014

I. Introduction

Thank you for the opportunity to provide testimony to the Little Hoover Commission. The following represents a joint response to the questions posed to the various energy agencies as well as the Governor's Office.

California is a world-renowned leader on climate and energy issues and its leadership has resulted in economic benefits totaling tens of billions of dollars. Its policies regularly influence those being adopted by other states, countries, and the nation.

The current Administration recognizes the critical importance of developing a balanced and integrated plan that will build upon this leadership and enable us to address climate and energy issues through 2020, 2030, 2050 and beyond.

The State's energy governance structure is working effectively. California's four main agencies charged with energy and climate policy — the [California Energy Commission](#) (Energy Commission), [California Public Utilities Commission](#) (CPUC), [California Independent System Operator](#) (California ISO), and [California Air Resources Board](#) (CARB)—work closely together on policies and plans that are being implemented to help California achieve immediate and long-term environmental, energy and economic goals.

California is on track to meet near-term goals in considerable measure due to the agencies' closely coordinated collaboration and communication. This is reflected in numerous joint efforts, most notably, since 2010, the principals of these agencies, along with the Governor's Office and leaders of other agencies such as the State Water Resources Control Board (SWRCB), have met monthly to ensure high-level coordination on key statutes and initiatives. These include AB 32, the Renewables Portfolio Standard, energy efficiency policies, clean car programs, grid reliability and operations, and rate impacts to consumers. These meetings enable agency leaders to:

- Maintain a shared understanding of the State's climate and energy goals.
- Jointly define the strategies and policies for achieving the State's goals in a cost-effective manner.
- Review progress, identify areas requiring improved integration and planning, and resolve any specific conflicts in policy implementation.

The following answers to questions posed are designed to elaborate how California is modernizing its energy governance structure in a way that enables the State to meet its climate and energy goals in a safe, cost-effective, and reliable way.

II. Requests of the Governor in 2012 Report

1. *How much in the aggregate will recent major policy changes related to energy affect electricity reliability and rates, and are these policies achieving California's stated environmental, energy and economic goals?*

Energy policy changes will contribute to overall system reliability by diversifying the current and expected resource portfolio and by driving technology innovations that will increase the State's ability to more efficiently use energy resources and transmission. The California ISO is working closely with the CPUC, Energy Commission, industry and stakeholders to fully develop and integrate energy products such as a flexible ramping product that balances variable resources such as wind and solar with a full set of diverse resources including demand response, energy efficiency, and storage. Remaining issues such as potential overgeneration during high renewables production also will be addressed.

With respect to rate impacts, the CPUC forecasts that rates will increase modestly over the next five years, in line or slightly above the rate of inflation. The driving factors of rate increases include distribution and transmission infrastructure upgrades and replacement, additional generating capacity necessary to replace the approximately 2,200 megawatt (MW) San Onofre Nuclear Generating Station (San Onofre) and once-through cooling (OTC) power plants, possible increases in natural gas prices, as well as increased power procurement costs associated with gas-fired and renewable resources. The CPUC's forecast of rate increases is discussed in more detail below.

Moreover, ratepayer demand-side management programs have resulted in significant net benefits to the system. For instance, over the past ten years, customer-funded energy efficiency programs resulted in energy savings that have provided, on average, an estimated \$200 million per year in net benefits to utility customers.¹ These energy efficiency investments have contributed to the relatively flat per capita energy demand of Californians.² As a result of this lower per capita consumption, California customers have some of the lowest energy bills in the country, despite higher-than-average rates.³

1 Based on a combination of evaluated and CPUC-authorized, but as-yet unevaluated efficiency portfolios.

2 While other factors have contributed as well, leading to disagreement over the extent to which California's energy efficiency efforts have contributed to reduced per capita demand, there is little disagreement that the state's energy efficiency efforts were a significant contributing factor to this phenomenon.

3 In 2012, California residential electric bills were nearly 20 percent lower than the average U.S. residential electric bill, and the rest of the U.S. paid \$20 more per month on residential bills than do

Finally, the energy agencies are actively considering and addressing any potential effects that variable energy resources could have on system reliability and has planning processes in place to ensure grid stability, both in the short- and long-term. The CPUC has two interrelated programs that ensure system reliability. The long-term procurement plan (LTPP) proceeding examines the resources needed to maintain electric reliability, looking both 10 and 20 year into the future, and authorizes the construction of new resources when needed. The Resource Adequacy program ensures that sufficient existing resources are under contract for the next year.

For several years the CPUC and the California ISO have been studying the impact increased variable resources have on system reliability through the CPUC's LTPP proceeding and proceedings at the California ISO. In a settlement filed in 2011, the major parties, including the California ISO, agreed that there was not an immediate need for the CPUC to authorize construction of additional flexible resources to ensure reliability, but that more study was needed about the long-term forecast for flexibility needs 10 years in the future. In 2012 and 2013, the Energy Division held several workshops where parties presented various flexibility needs modeling options and examined the strengths and weaknesses of those options. At the California ISO request, testimony on flexibility modeling and need was postponed with the anticipation of taking it up again in the next proceeding. The new LTPP proceeding (Rulemaking 13-12-010) will focus on developing the proper tools to determine what flexible resources are needed and the most appropriate resources to meet any identified need. Depending on the model results and final proceeding schedule, the CPUC will likely consider whether there is a need to authorize new flexible resources to meet long-term resource planning needs sometime in 2015.

The resource adequacy program has required load serving entities to provide adequate system capacity resources since 2006, and local capacity resources since 2007. The resource adequacy program ensures that a sufficient amount of existing resources are under contract and available to the system operator. With the increase in variable renewable energy resources, there is concern that the system operator may have sufficient system and local resources but find itself short of flexible capacity resources. To address this concern, the CPUC has worked with the California ISO and other stakeholders to amend the resource adequacy program and adopt a flexible capacity requirement, similar to the local and system resource adequacy requirements that exist today. The CPUC approved an interim flexibility capacity framework for 2014 – 2017 in D.13-06-024 and adopted non-binding flexible capacity targets for load serving entities in 2014, with the expectation that these targets would become binding for the 2015 resource adequacy compliance year. Under this framework, each load serving entity is required to procure flexible resources and these resources are required to economically bid into the day-

California residents. (From EIA's 2012 electricity bill data in Table 5a: Residential average monthly bill by Census Division, and State, published on November 8, 2013, www.eia.gov/electricity/sales_revenue_price/xls/table5_a.xls).

ahead and real-time markets. These flexible resources are expected to provide the California ISO with sufficient capability to address the anticipated flexibility needs in the coming year.

2. *What portion of consumers' electricity bills can and will be attributed to major repairs, upgrades and new construction of all electricity generating plants and electricity transmission in California?*

An estimated 15 to 20 percent of electricity bills have been and will be attributed to major repairs, upgrades and new construction of all electricity generating plants and electricity transmission for California's major utilities (IOUs).⁴ Costs for investments in electricity generating facilities are considered by the CPUC in the IOUs' general rate cases. The Federal Energy Regulatory Commission considers investments in transmission facilities.

3. *What barriers need to be overcome so that California consumers can better manage their energy use and take advantage of fiscal incentives to reduce and strategically manage energy consumption?*

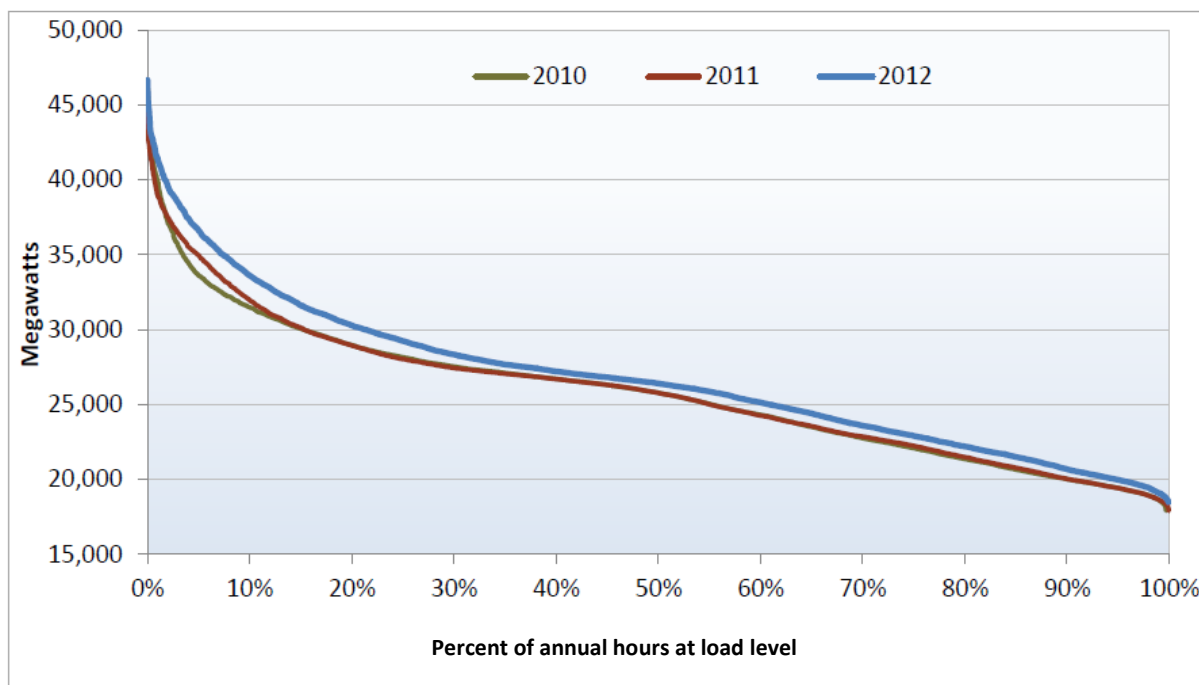
The energy agencies continue to advance energy efficiency and demand response (DR) as top priorities in the loading order and, more specifically, to explore how best to optimize these efforts to strategically manage energy consumption to improve reliability. Reforming rate structure, advancing DR, and advancing energy efficiency are key tools to better enable Californians to manage energy consumption as part of the State's overall effort to improve electricity system reliability, contain costs, and meet environmental goals.

An important step is to align rates with the variable seasonal and temporal dependent costs of generating and delivering energy, while factoring in the State's long-term policy goals, and balancing social equity concerns. The Energy Commission's 2012 IEPR Update recognized the need to revise residential rate structures "to reflect the evolving nature of the electric system while ensuring that infrastructure investments are recovered through equitable pricing" and supported the CPUC's proceeding R.12-06-013, *Order Instituting Rulemaking on Commission's Own Motion to Conduct a Comprehensive Examination of Investor Owned Electric Utilities' Residential Rate Structures, the Transition to Time Varying and Dynamic Rates, and Other Statutory Obligations*. The CPUC's rate reform efforts are discussed further below.

4 The estimate was derived from data in the most recent Gas and Electric Utility Cost report submitted by the CPUC to the California Legislature in compliance with Public Utilities Code Section 747 (Appendix A: AB 67 Table – 2012 Electric Revenue Requirement, p. 36). Generation-related General Rate Case (GRC) revenue data shown in the report includes revenue for investments in power generation facilities; Transmission Owner Rate Case revenue data includes revenues for investments in transmission facilities. For purposes of deriving the estimate, CPUC staff added one-half of the generation-related GRC revenue data with the Transmission Owner Rate Case revenue data, and divided by total electric revenues. Staff used one-half of the generation-related GRC revenue data because that revenue data also includes on-going operations and maintenance revenues that are not related to new investments.

While California has successfully flattened the growth of per capita energy use over the last three decades, total peak energy use has continued to rise. The Energy Commission forecasts these trends to continue. Increasing energy efficiency and DR are keys to enabling California consumers to better manage their energy use. The figure below illustrates that the peak loads for which the electrical system must provide additional capacity occur for a very small number of hours annually. It is economically inefficient to develop additional infrastructure that is used infrequently for supply and delivery of energy for this limited number of hours. Modifying customer demand (load) during these time periods, through DR, peak load targeted energy efficiency, and time-based rate structures such as TOU tariffs, will be less costly for ratepayers.

Figure 1: California ISO Control Area Load Duration Curve



Source: California Independent System Operator, 2012

Demand Response

The CPUC established a goal for price-responsive DR programs to achieve 5 percent of system peak load by 2007. At present, price-responsive DR programs represent approximately 2.5 percent of peak load. Past (and current) barriers to customer adoption of DR include: (1) deployment of advanced metering infrastructure, (2) statutory constraints on residential rate design, and (3) overly complex rate design of voluntary residential time-of-use rates. The CPUC leads the nation in approving the deployment of the advanced metering infrastructure in all three IOU service territories. However, the simple presence of advanced meters will not result in significant levels of DR participation by residential customers.

In part, lack of residential DR participation is due to legislatively imposed limitations on time-based rates. Some of these restrictions were modified by the enactment of AB 327 in 2013. With this legislation, the CPUC may develop rates that promote energy efficiency and DR, including

the ability, with appropriate consumer safeguards, to implement default “Time-of-Use” (“TOU”) rates in 2018.⁵ TOU rates are tariffs which encourage DR and dynamic rates⁶ have become mandatory for California’s nonresidential electric consumers but TOU rates are as-yet little utilized by California residential customers. While nearly all California IOU ratepayers now have TOU-capable meters, less than 3 percent of residential ratepayers have chosen to switch to voluntary (opt-in) time-varying rates.⁷

Economists have long recognized the benefits of time-varying rates, which ensure that customers’ rates reflect predictable variation in the marginal cost of electricity. Currently, the CPUC is considering (in R.12-06-013) how, and whether, to reform IOU rate structures, and possibly to authorize or require the IOUs to offer TOU rates as a default rate, with all of the consumer protections required under AB 327.

Another important element is doing a much better job of offering information to consumers themselves and also businesses, contractors, manufacturers, investors and others, to enable market led innovations and solutions. Moving the utility sector into the 21st century information economy by utilizing and leveraging the vast amount of data currently available from ratepayer funded advanced metering infrastructure on the demand (customer) side and ratepayer funded improvements to the utility infrastructure on the supply side would help drive this transformation. Access to this data is much-needed for policy development and tracking purposes and would create a foundation to better target incentives, R&D efforts, and other programs to help achieve the challenging task of realizing results at a sufficient scale to reach the State’s energy and climate goals.

California policy must focus on development and increased scale of multiple DR products that can help avoid development of new generation capacity and transmission and provide additional tools for system balancing through load flexibility and management. The electricity grid’s operational and reliability complexities-- San Onofre retirement, approaching once-through-cooling requirements, and the increasing need for flexibility to integrate intermittent renewable resources—as well as the long-term challenge of responding to the impacts of climate change, dictate that DR play a much larger and substantially different role in electricity demand management and reliability enhancement than today. Given the long lead time required to develop generation and transmission, the need to capture the value of DR’s potential is urgent. Slippage in the emergence of a significant DR market will necessitate development of more generation and/or transmission than would otherwise be required. In the *2013 IEPR*, the Energy Commission identified five strategies to help advance DR:

5 Consumer safeguards required by AB 327 include: (1) ability to opt-out of TOU rates and incur no additional charges; (2) “shadow billing” to show what individual customer bills would be under available tariffs; and (3) bill protection to ensure that customers pay no more than they would have under their previously applicable tariff.

6 Dynamic rates are a time varying rate including TOU, critical peak pricing, and others.

7 Compare to Arizona utilities, which have achieved participation rates of 25 to 50 percent, and Sacramento Municipal Utilities District, which has 16 to 18 percent participation in its opt-in TOU pilot.

- 1) Establishing rules for direct participation in California ISO markets;
- 2) Developing and pilot testing additional market products;
- 3) Resolving regulatory barriers;
- 4) Continuing the collaborative process among the Energy Commission, CPUC, California ISO, and Governor's Office, including efforts to advance fast-response DR; and
- 5) Advancing customer acceptance.

Energy Efficiency

Pursuant to Public Utility Code sections 454.5, 454.55 and 454.56, the CPUC establishes energy savings goals for the IOUs to achieve all cost-effective, reliable and feasible energy efficiency before procuring supply-side resources. The CPUC authorizes nearly \$1 billion annually for a portfolio of energy efficiency programs to achieve all cost effective potential, through incentives, financing, education, training, marketing, and other program activities. These programs are specifically designed to overcome a range of market barriers, such as upfront cost, lack of financing, and lack of consumer awareness.

For energy efficiency, enforcement of existing codes and standards, as well as development of new codes and standards, will be key tools for managing energy use. It is important to note that as energy efficiency codes and standards continue to raise minimum mandatory thresholds, energy efficiency savings from incentive-based programs may become more costly unless those programs continue to expand beyond traditional efficiency measures into areas such as plug loads and behavior influenced savings. To accomplish this for existing buildings and conditions, the state may need to modify its incentive mechanisms to provide value for both compliance with the standards and the total energy savings from upgrading inefficient equipment and building measures. Also, the Energy Commission has recommended that future California Building Energy Efficiency and Appliance Energy Efficiency Standards updates should consider cost-effective incorporation of features that can assist in achieving DR to improve grid resilience and responsiveness through increased load flexibility.⁸

A related issue is uneven or absent access to capital to make energy improvements to existing buildings, particularly in the public and residential sectors. Innovative finance mechanisms and capital deployment strategies are needed to encourage investment in cost-effective, long-term energy efficiency improvements as ratepayer and taxpayer resources are not adequate to provide financial assistance to achieve all the efficiency savings currently possible. A consultant report to the CPUC⁹ shows that 30 percent of all households are low-income and that low-

8 California Energy Commission. 2013. **2013 Integrated Energy Policy Report**. Publication Number: CEC 100-2013-001-CMF. <http://www.energy.ca.gov/2013publications/CEC-100-2013-001/CEC-100-2013-001-CMF.pdf>.

9 CADMUS, ESA Program Multifamily Segment Study Report DRAFT, November 6, 2013, http://www.energydataweb.com/cpucFiles/pdaDocs/991/ESA%20MF%20Segment%20Study_Draft_2013.11.04.pdf.

income multifamily households (defined as 5 or more housing units) represent about 9 percent of total residential households, 42 percent of multifamily households, and 32 percent of low-income households. The Energy Savings Assistance Program is an important tool in providing access to energy efficiency improvements in low-income households, but given the large need and broad upgrades needed to both improve conditions for these low-income households and to meet the state's energy and climate goals, additional resources are needed. The state will need to work closely with utilities and other stakeholders to maximize effectiveness of existing programs and establish the conditions to facilitate and encourage the deployment of private capital to achieve the full potential of existing energy efficiency upgrade opportunities statewide.

The Energy Commission is addressing these and other key issues while developing a roadmap for advancing energy efficiency in existing buildings in response to Assembly Bill 758 (Skinner, Chapter 470, Statutes of 2009). The *Action Plan for the Comprehensive Energy Efficiency Program for Existing Building* is expected to be finalized in the summer of 2014 and is being developed in collaboration with the CPUC, regional and local governments, the state's major utilities, and stakeholders from multiple industries. The 758 Action Plan will describe courses of action and make recommendations to reduce transaction costs and drive demand for energy efficiency, with the objective of fully activating the energy efficiency upgrade market by 2015.

4. *The Commission recommended the Governor, through a public process, establish a comprehensive plan to prioritize current and future energy goals by June 2014. This plan would identify what actions need to be taken and in what order to maximize progress toward the stated goals and include guidelines to ensure any new proposals are consistent with the goals of the plan. What progress has been made on this?*

The Administration recognizes the critical importance of developing a balanced and integrated plan for dealing with climate change after 2020. The initial step in this process is the Update¹⁰ to the AB 32 Scoping Plan. The Update lays out the scientific imperative for reducing greenhouse gas (GHG) emissions by 80 percent below 1990 levels by 2050 to avoid dangerous climate change; the challenges and opportunities in each of the major sectors of the economy that contribute to GHG emissions (energy, transportation, water, agriculture, natural and working lands, waste management, and high global warming potential gases), and in broad terms a menu of recommended strategies to achieve longer term reductions. The plan also highlights the importance of developing a midterm reduction target for 2030 that is consistent with this 2050 climate objective.

The State energy and environmental agencies currently are jointly carrying out comprehensive data analyses and modeling to determine what the appropriate 2030 target should be and evaluating pathways for achieving the necessary deep reductions in statewide GHG emissions to meet this target. This evaluation will include the challenges of retrofitting existing buildings

10 California Air Resources Board, Proposed First Update to the Climate Change Scoping Plan: Building on the Framework, February 2014, http://www.arb.ca.gov/cc/scopingplan/2013_update/draft_proposed_first_update.pdf

with energy efficiency improvements, attaining zero net energy goals for new buildings, and integrating increasing levels of renewable generation with electrification of transportation and grid operations, while ensuring system reliability and operability. The analysis also will include consideration of the full set of opportunities for the continued evolution of the State's transportation system, including competing energy resources and technologies, while considering both personal transportation needs and the demands for goods movement. The evaluation additionally will include review of key opportunities for reductions from the agricultural, water, land use, natural lands, and waste sectors, and will consider the interplay between economic sectors, cost impacts, and the proper sequence for implementing various reduction strategies.

Based on these analyses and modeling, the agencies will recommend a 2030 GHG reduction target and an integrated, economy-wide plan for meeting this target. The Administration anticipates completing this plan by the end of 2014 and releasing it for public review and comment as a supplement to the AB 32 Scoping Plan in early 2015. Based on public and stakeholder input, we anticipate submitting a proposal to implement the plan to the Legislature later in 2015. We believe it is advisable to await the results of this planning process to determine what the best suite of climate and energy measures is going forward.

5. *The Commission recommended that policymakers develop a plan to modernize California's energy governance structure and requested that a strategy be completed by December 2014. What progress has been made on this?*

Overall the State's energy governance structure is working effectively, and, while it can always be improved, there does not appear to be a need to "overhaul" or "modernize" it. California is on track to meet our AB 32 goal of 427 million metric tons of GHGs emitted statewide by 2020, as well as achieve our other clean energy goals. The state already is procuring close to 23 percent of its electricity from renewables, and will meet the statutory mandate of 33 percent renewables ahead of schedule. The state has well over 17,400 megawatts (MW) of renewables online, including 3,300 megawatts of renewable capacity that became commercially operational in 2013, the largest annual increase ever. California leads the nation with close to 2,000 MW of rooftop solar. We are continuing to tighten the state's buildings standards, on our way to the Zero Net Energy building target, and also adopt stricter appliance standards, such as for battery chargers and televisions, that are being emulated by the federal government and other countries. The state is on schedule to meet our goal of 1.5 million Zero Emission Vehicles (ZEVs) in California by 2025; the number of ZEVs purchased in California doubled last year, and ZEVs are growing faster than hybrids at a comparable phase of their introduction. The state's cap and trade program, designed and implemented through intensive collaboration between the energy agencies and California Air Resources Board (CARB), has developed a robust market that is working smoothly, with six auctions held to date. These milestones are being achieved without any adverse impact on the reliability of our grid, and with little impact on utility rates or bills.

III. Questions Common to Multiple Agencies and/or Governor's Office

The successes noted above are the result of close and unprecedented collaboration and communication among the State’s energy and environmental agencies. This is reflected in numerous joint, coordinated efforts.

Most notably, since 2010, the principals of the four main agencies charged with energy and climate policy in the State—CPUC, Energy Commission, California ISO, and CARB, along with the Governor’s office, and as needed leaders of other agencies such as the State Water Resources Control Board (SWRCB)—have been meeting monthly to ensure high-level coordination on key statutes and initiatives. These include AB 32, the Renewables Portfolio Standard, energy efficiency policies, clean car programs, grid reliability and operations, and rate impacts to consumers. The meetings allow the agency leaders to

- Maintain a shared understanding of the State’s climate and energy goals.
- Jointly define the strategies and policies for achieving the State’s goals in a cost-effective manner.
- Review progress, identify areas requiring improved integration and planning, and resolve any specific conflicts in policy implementation.

The group has proven to be a highly effective and streamlined body for coordinating policy across the Administration. Below are additional examples of how the agencies are working together to implement the state’s multifaceted energy policies and to meet evolving challenges to ensure delivery of safe, reliable, and affordable energy in California.

California’s Clean Energy Future – In 2010, the energy agencies and the California Environmental Protection Agency developed *California’s Clean Energy Future*, an implementation plan and roadmap for the steps that needed to be taken by multiple agencies and in what sequence to meet various clean energy and climate objectives (the metrics are now part of the Energy Commission’s *Tracking Progress* web page¹¹ that shows progress in meeting these objectives).

Integrated Energy Policy Report – Senate Bill 1389 (Bowen and Sher, Chapter 568, Statutes of 2002) requires the Energy Commission to “conduct assessments and forecasts of all aspects of energy industry supply, production, transportation, delivery and distribution, demand, and prices.” These assessments and forecasts are used to develop recommendations for energy policies that conserve state resources, protect the environment, provide reliable energy, enhance the state’s economy, and protect public health and safety. The Energy Commission develops this analysis biennially in the *Integrated Energy Policy Report (IEPR)* to address the most current and pressing energy issues facing the state. Updates are developed on even numbered years. The IEPR is developed with broad public participation and in close coordination with the CPUC, California ISO, CARB, SWRCB, and other agencies.

Coordinated California Energy Demand Forecasts – The Energy Commission, CPUC, and California ISO are coordinating closely on energy efficiency and demand-side forecasting assumptions for

¹¹ http://www.energy.ca.gov/renewables/tracking_progress/index.html.

infrastructure planning and procurement decisions, pursuant to commitments made following a January 2013 Senate Committee oversight hearing. For the first-time, the energy agencies' leadership worked together in the 2013 IEPR to agree upon a single managed demand forecast that incorporates all energy efficiency and other demand-side programs. This fulfills one of the commitments made by the joint agencies in a letter to Senator Padilla and Senator Fuller.¹² This coordinated effort will ensure that energy efficiency is properly and consistently accounted for by each of the planning agencies. The agencies have institutionalized coordinating committees at the staff, management and leadership levels to ensure that the agencies continue to use a consistent set of demand-side planning assumptions in their various proceedings.

Efforts are ongoing to better align the Energy Commission's energy demand forecast with other state planning efforts. For example, the Energy Commission committed to update the California Energy Demand Forecast in each IEPR update cycle to meet the needs of the CPUC's and California ISO's procurement and transmission planning processes, respectively.¹³ Also, the Energy Commission plans to continue to improve the granularity of the demand forecast in future years. Staff currently separates the planning area and climate zone forecasts to correspond to transmission control areas and congestion zones¹⁴ in a "top-down" analysis. Disaggregation of the demand forecast beyond the climate zone level to something like local capacity area would allow more refined, "bottom-up" analyses for local congestion zones. The further the forecast can be disaggregated, the more useful it will be for local or regional resource and transmission planning, particularly as those activities shift away from traditional considerations—power plants and transmission lines—to preferred resources such as targeted efficiency, DR, and distributed generation.

Joint Reliability Framework—The Joint Reliability Framework is a framework describing steps the CPUC and the ISO plan to take to ensure long-term electric reliability in California. Adopted in November 2013 by the CPUC and in December 2013 by the California ISO, the framework identifies common goals and guiding principles that lead to three inter-related initiatives to develop:

- Multi-year resource adequacy requirements;
- A market-based replacement to the California ISO's existing backstop procurement tariff; and
- A unified long-term reliability planning assessment.

¹² Letter from the Energy Commission, CPUC, and California ISO to Senators Alex Padilla and Jean Fuller,

http://seuc.senate.ca.gov/sites/seuc.senate.ca.gov/files/CEC%20CPUC%20ISO%20response%20to%20Padilla%20and%20Fuller_02%2025%2013.pdf.

¹³ The 2014 update of the California Energy Demand Forecast will be limited to updating economic and demographic projections, adding another year of historical peak and consumption data, and making any needed corrections.

¹⁴ A *congestion zone* is an area with concentrated load, where transmission within the area is not sufficient to allow access to competitively priced energy.

The plan's principles include providing the California ISO balancing area with sufficient resources to satisfy system, local, and flexible capacity needs; accommodating resource procurement to meet policy mandates and objectives consistent with CPUC decisions; and incentivizing an increased quantity of preferred resources to help serve the energy needs of California consumers. The proposal underscores the importance of evolving procurement and reliability assurance mechanisms to support a reliable electric supply during this significant time of change in the California electric system.

In support of the plan, the California ISO, CPUC, and Energy Commission are collaborating to consider how demand forecasts and data collection mechanisms should be modified to further support reliability assurance efforts.

Southern California Reliability: Following Southern California Edison's announcement to retire San Onofre, Governor Brown directed the leaders of California's energy agencies to examine Southern California reliability issues. The staff of the CPUC, California ISO, and Energy Commission collaboratively developed the *Preliminary Reliability Plan for LA Basin and San Diego*¹⁵ with technical discussion participation by CARB, SWRCB, and the South California Air Quality Management District (SCAQMD) staff. The plan contains a proposed set of actions to reinforce the greater Los Angeles Basin and San Diego grid subsequent to the retirement of San Onofre and the fast approaching compliance timeline for power plants subject to OTC regulation. San Onofre retirement resulted in the loss of 2,246 MW of round the clock energy as well as a significant amount of reactive voltage support.

As part of this collaborative effort, the California ISO Board of Governors in March 2014 approved three grid solutions at an estimated cost of about \$1 billion that will increase the area's voltage stability and more efficiently uses the existing infrastructure and minimize GHG emissions. The California ISO will continue to explore additional solutions that will take into account the latest developments in bringing storage technologies to market as well as enhancements that will strengthen the ability of DR and energy efficiency programs to fully participate in the markets.

Meanwhile, the CPUC approved a procurement plan to address the reliability issues related to the closure of San Onofre. As part of its 2012 long-term procurement proceeding addressing the loss of San Onofre, CPUC Commissioners required Southern California Edison (SCE) and San Diego Gas & Electric (SDG&E) to satisfy their requirement by procuring preferred and natural gas resources that includes contracting for 50 MW and 25 MW, respectively, of energy storage by 2022. In March 2014 (D.14-03-004),¹⁶ the CPUC authorized SCE authorized to procure

15 CPUC, Energy Commission, and California ISO staff, *Preliminary Reliability Plan for the LA Basin and San Diego*, http://www.energy.ca.gov/2013_energypolicy/documents/#09092013

16 CPUC, Decision Authorizing Long-Term Procurement for Local Capacity Requirements Due to Permanent Retirement of the San Onofre Nuclear Generations Stations, Decision 14-03-004, Rulemaking 12-03-14, March 13, 2014,

<http://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M089/K008/89008104.PDF>

between 1,900 MW and 2,500 MW in total in the Los Angeles Basin. The CPUC authorized SDG&E to acquire between 800 MW and 1,100 MW for its local capacity needs.

Another important joint agency response to the unexpected retirement of San Onofre was to ensure adequate voltage support in the affected region. The CPUC, California ISO, and Energy Commission worked to ensure the retired Huntington Beach units (1 and 2) were converted into synchronous condensers. As a result, California ISO signed a FERC approved Reliability-Must-Run contract with these units and this joint effort successfully improved reliability in the affected area.

Coordination to Address Once Through Cooling – The agencies closely coordinate on the SWRCB OTC policy and AB 1318 (CARB report on Southern California air permit needs) through a biweekly call (Energy Commission, California ISO, CPUC, CARB, SWRCB), the SWRCB’s inter-agency working group (Energy Commission, California ISO, CPUC, CARB, SWRCB, California State Lands Commission, California Coastal Commission), and the SWRCB’s Statewide Advisory Committee on Cooling Water Intake Structures, or SACCWIS (same membership as working group).

The SACCWIS was established by the SWRCB in the adopted Policy on the Use of Coastal and Estuarine Waters for Power Plant Cooling (OTC policy) as a formal advisory body. The adopted OTC policy establishes that SACCWIS report annually to the SWRCB to recommend whether it believes compliance date changes are warranted. The SWRCB’s adopted OTC policy includes provisions that would allow modification of compliance dates if the energy agencies through the SACCWIS recommend delays due to reliability concerns.

Energy Storage – In 2013 the CPUC established a target for PG&E, SCE, and SDG&E to build, buy, contract, or otherwise procure 1,325 MW of energy storage capacity by 2020 (D.13-10-040). Other load serving entities were directed to procure energy storage with total capacity up to 1 percent of 2020 peak load. The rulemaking was supported by the Energy Commission’s funding of a sophisticated energy storage cost-effectiveness study completed by DNV KEMA. The Energy Commission and CPUC staff collaborated extensively in scoping the study and jointly managing the consultant’s work.

The CPUC recently opened a new proceeding to review storage procurement plans filed by the utilities describing the details of competitive solicitations to be held in December 2014.

In 2012, the CPUC held joint workshops including stakeholders in the Long-Term Planning Proceeding (LTPP, R.12-03-014) which helped lead to a mandate for SCE to procure at least 50 MW of energy storage to meet local capacity requirements in the Los Angeles Basin (D.13-02-015).¹⁷ A recently approved Track 4 decision in that proceeding also directed SDG&E to procure a minimum of 20 MW of energy storage. Both decisions were informed by an extensive

17 CPUC, Decision Authorizing Long-Term Procurement for Local Capacity Requirements, D.13-02-015, R.12-03-014, February 13, 2013, <http://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M050/K374/50374520.PDF>

collaborative effort between the CPUC, Energy Commission, and California ISO focused on modeling the impact of increasing levels of renewables and retirement of conventional resources, projecting demand trends, and estimating long term system needs for new resources. In addition, work continues at the CPUC to identify and remove barriers to customer and utility use of energy storage. The CPUC and California ISO staff have been collaborating on defining flexibility capacity, an important factor in monetizing additional value for storage, as it relates to wholesale markets and Resource Adequacy.

Drought Task Force – Another example of how the energy agencies come together in response to pressing issues is through their work in response to the current drought. Staff from the Energy Commission, CPUC, California ISO, SWRCB, and California Department of Water Resources have developed a working group to provide ongoing monitoring and assessment to the Governor’s larger Drought Task Force of drought impacts on hydropower and other gas-fired or thermal generation with water requirements, and by extension, the California electric grid overall.

Renewable Energy Coordination – At the request of the Governor, the Energy Commission, in consultation with the other agencies, prepared a comprehensive Renewable Action Plan as part of the *2012 IEPR Update*.¹⁸ The plan details approximately 50 priority actions for various lead agencies to achieve the State’s renewable energy goals.

In addition, the CPUC, Energy Commission, CARB work closely together to administer California’s Renewables Portfolio Standard (RPS) program. The CPUC's responsibilities include:

- Determining annual procurement targets and enforcing compliance.
- Reviewing IOU contracts for RPS-eligible energy.
- Establishing the standard terms and conditions used by IOUs in their contracts for eligible renewable energy.

The Energy Commission verifies all renewable generation that is claimed toward RPS compliance targets and transmits verified data on IOU renewable purchases to the CPUC for use in determining compliance. As part of its responsibility for determining RPS compliance for the publicly owned utilities, the Energy Commission is coordinating closely with the ARB, which is responsible for actual enforcement actions for non-compliance. Also, the Energy Commission, CPUC, and ARB continue to coordinate on RPS rules and procedures to ensure that the RPS is a cohesive program and that rules send consistent market signals.

DRECP – The Desert Renewable Energy Conservation Plan (DRECP, initiated by Executive Order (S-14-08)), a major component of California's renewable energy planning efforts, will help provide effective protection and conservation of desert ecosystems while allowing for the

18 California Energy Commission, 2012. *2012 Integrated Energy Policy Report Update*. Publication Number: CEC-100-2012-001-CMF. <http://www.energy.ca.gov/2012publications/CEC-100-2012-001/CEC-100-2012-001-CMF.pdf>.

appropriate development of renewable energy projects, and permit timing and cost certainty for developers under state and federal endangered species laws. The DRECP is focused on the desert regions and adjacent lands of seven California counties – Imperial, Inyo, Kern, Los Angeles, Riverside, San Bernardino, and San Diego. Approximately 22.5 million acres of federal and non-federal California desert land are in the DRECP Plan Area.

It is being prepared through an unprecedented collaborative effort between the Energy Commission, California Department of Fish and Wildlife, the U.S. Bureau of Land Management, and the U.S. Fish and Wildlife Service also known as the Renewable Energy Action Team (REAT). The REAT is working closely with other entities, including the CPUC, California ISO, utilities, and desert counties. The effort is helping to inform energy planning efforts as initial results are providing input into the CPUC's LTPP and California ISO's TPP.

Coordinated Transmission and Distribution Research – The Energy Commission coordinates with the California ISO on research needs to develop a robust transmission and distribution grid with advanced communications, controls, and automation. Coordination with the California ISO includes their participation on project technical advisory committees where the California ISO provides feedback on the direction of research projects and how they can provide grid benefits. The Energy Commission also has coordinated with the California ISO led efforts to develop a state vehicle grid roadmap that identifies research that will enable electric vehicles to provide distribution system benefits. Finally, the Energy Commission is a member of the California ISO's Transmission Maintenance Coordinating Committee, and can provide a public perspective on maintenance activities to ensure the reliability of the transmission system in California.

Climate Action Team –The Climate Action Team (CAT) coordinates statewide efforts to implement global warming emission reduction programs and the state's Climate Adaptation Strategy. The CAT members are state agency secretaries and the heads of agency, boards and departments, led by the Secretary of California Environmental Protection Agency. The CAT meets quarterly and includes several CAT subgroups, some of which meet monthly. These subgroups include agriculture, biodiversity, research, water and energy, and public health. The subgroups are state interagency workgroups that report regularly to the CAT. An example is the CAT Research Working Group led by Energy Commission Chair Weisenmiller which meets monthly and includes representatives from about 22 state agencies including CARB, CPUC, and SWRCB. Two of the most notable products of this group are the preparation of a catalog of climate research activities supported by California in the last 10 years and a draft final Climate Change Research Plan for California prepared by about 50 authors representing the agencies that are part of the CAT Research Working Group. The CAT, as well as the CAT subgroups, provide a consistent forum for state agencies to meet, collaborate, and efficiently coordinate and implement state climate policy.

ZEV Interagency Working Group and Implementation Plan – In 2012, Governor Brown issued Executive Order B-16-2012 establishing goals that California zero-emission vehicle infrastructure is in place to support one million ZEVs by 2020 and that over 1.5 million ZEVs

are on California roads by 2025; directing state agencies to take actions to facilitate achievement of these goals. In 2013, the Energy Commission, California ISO, CARB, CPUC and other state agencies released a detailed ZEV Action Plan and have been meeting regularly to implement the plan and track progress.

California Statewide Plug-In Electric Vehicle Infrastructure Plan – In January 2013, the Energy Commission held a statewide PEV infrastructure stakeholder workshop in partnership with the Governor’s Office, the Air Resources Board and the National Renewable Energy Laboratories (NREL) to solicit input for the Energy Commission funded *California Statewide Plug-In Electric Vehicle Infrastructure Plan*. The workshop was attended by over 100 industry and local government stakeholders, and provided valuable input for the Statewide PEV Infrastructure Plan. This infrastructure plan is on track for publication in April 2014 and will provide guidance on the best use of public infrastructure funds for market growth of PEVs and improve analytical efforts necessary for EVSE siting decisions, to attain the Executive Order goal of California ZEV infrastructure in place to support one million ZEVs by 2020.

Vehicle to Grid Integration Roadmap – To foster the integration of electric vehicle charging and advance the Governor’s *Zero Emission Vehicle Action Plan*, the California ISO developed the *Vehicle to Grid Integration Roadmap*.¹⁹ The plan was developed in coordination with the Governor’s Office, Energy Commission, CARB, and CPUC. It contains strategies to implement the technologies and market rules vital to creating a path for electric vehicles to provide valuable services, which in turn contributes to the reliable operation of the grid.

The Roadmap includes strategies to study and conduct pilot programs that promote smart charging and vehicle to grid services. Smart charging involves one-way communication and power flow from the grid to the vehicle and occurs when customers choose to have their vehicle charging behavior based on price or other signals directly consumed by the EV or the charging equipment. Vehicle-to-grid involves two-way communication and electricity flow from the grid to the EV battery and from the EV back to the grid. As a short term strategy, smart charging aligns with grid conditions so EV owners, including fleet owners, can keep their batteries full and meet their driving needs while not increasing peak load, thus avoiding the need to build additional generation and transmission which would cost millions of dollars. Unlocking EV value includes promoting EV aggregation that can be bid into the California ISO wholesale market as grid services.

Roadmap related activity is underway at the CPUC which has several related proceedings open (and some with decisions) including its storage proceeding (R.10-12-007). Also, the California ISO is partnering with others in several pilot programs such as the Los Angeles Air Force Base Vehicle-to-Grid Demonstration and Launching the Market for Electric School Buses.

19 California ISO, *California Vehicle-Grid Integration (VGI) Roadmap: Enabling vehicle-based grid services*, February 2014, <http://www.caiso.com/Documents/Vehicle-GridIntegrationRoadmap.pdf>.

IV. Questions Directed to Individual Agencies and Governor's Office

Questions for the CPUC

1. *Update on the CPUC's progress on efforts to develop new electricity rate tiers and rules to guide the implementation of demand response.*

The CPUC's ongoing residential rate reform rulemaking (R.12-06-013) is addressing implementation of AB 327 (Perea, 2013), which authorizes the CPUC to develop new residential rate structures, including collapsing the current multi-tiered rates into fewer tiers and other possible reforms. The proceeding is structured in two phases: (1) Phase 1 addresses 2015-2018 rate structure issues, (2) Phase 2 addresses 2014 summer rate relief. Both phases are scheduled to reach decisions by the end of this year.

With respect to DR, the CPUC initiated a new Rulemaking (R.) 13-09-011 in September 2013 to enhance the role of DR in meeting the state's resource planning needs and operational requirements. The primary purpose of the Rulemaking is to realign the existing portfolio of DR programs along a bifurcated framework of "load modifying" and "supply side" resources, and to enhance their usefulness to the grid and resource planning.²⁰ Load-modifying DR includes dynamic pricing programs and other programs that can be incorporated into the Energy Commission's demand forecast for resource planning purposes. Supply-side DR can be integrated into the California ISO's energy market, with utilities and/or third-party DR providers as the market participant. In February 2014, the CPUC finalized "Rule 24," the tariff governing rules for third-party provider participation of DR in the wholesale market using bundled customers. These Rule 24 changes will go live in the summer of 2014.

In its next phase, the Rulemaking will examine the criteria for categorizing specific programs as supply side or load modifying resources, address overall goals for DR, and consider creation of a capacity procurement mechanism for DR. CPUC staff proposed a reverse auction for DR capacity called the Demand Response Auction Mechanism (DRAM). Modeled after the Renewable Auction mechanism, the DRAM is designed to grow supply-side DR resources and ensure least cost procurement. DR resources procured through the DRAM would be held to CPUC resource adequacy criteria and California ISO must-offer obligations. As proposed, the first auction would run in 2015 for deliveries in the 2016 resource adequacy year.

The California ISO and CPUC are coordinating efforts to advance DR. The California ISO continues to be an active participant in the Rulemaking, and CPUC staff anticipates expanded formal and informal discussion with the California ISO during the next phase of the Rulemaking. Issues to address include California ISO market integration and supply side DR resources and DRAM design. The CPUC is also engaged in relevant California ISO stakeholder

²⁰ On March 27, 2014, the CPUC adopted a decision authorizing the bifurcation of DR programs. That decision (D.14-03-026) specifies that the fully bifurcated framework will be in effect starting with the 2017 program year. The decision continues longstanding CPUC direction to move towards greater integration of DR into wholesale markets.

initiatives, namely the Reliability Services Initiative which includes in its scope the development of two products key for DR market participation – the standard capacity product for DR (also called SCP3) and a must-offer obligation.

2. Any information available on the short-term and long-term trends in electricity costs in California and the factors driving those trends.

CPUC Energy Division staff produces system average rate forecasts as part of the annual SB 695 legislative report (due May 1). The CPUC's Energy Division is in the process of updating its rates forecasting analyses to incorporate certain new data for 2014, such as expected general rate case authorizations and gas price forecasts. Based on previous rate forecasts developed by the CPUC and the Energy Commission, the agencies expect average annual rate increases over the next 5 years in the range of 2-5%. Primary drivers for rate increases include grid modernization and infrastructure upgrades, gas pipeline and other safety-related investments, replacement power for the retired San Onofre Nuclear Generating Station, as well as renewables procurement and other clean energy investments. Rate increases in any given year may be higher or lower than the average increases overtime due to the timing of CPUC rate cases and when new investments are made.

Questions for the California ISO

- 1. What improvements have been made to align the CAISO's annual transmission planning process with the California Public Utilities Commission's Long Term Procurement Planning and the California Energy Commission's annual Integrated Energy Policy Report, as well as the need for increased coordination as the state moves closer to achieving the Renewables Portfolio Standard goal of 33 percent renewable energy by 2020?*

The Energy Commission, CPUC, and California ISO have had significant success in aligning efforts particularly for developing planning assumptions. The accomplishments include:

- Ongoing coordination: The agencies and California ISO formed a senior staff team to drive coordination and escalate issues to leadership levels as necessary.
- Demand forecast: The agencies and California ISO agreed on a single managed forecast and refinements in modeling as discussed above in *Coordinated California Energy Demand Forecasts*
- Procurement, transmission, and demand forecast process alignment: The California ISO and agencies together developed an interagency plan that is structured around a two-phased, biennial LTPP proceeding, with the Energy Commission and California ISO providing critical annual inputs to the Energy Commission's Integrated Energy Policy Report demand forecasting and the California ISO's transmission planning process. As discussed above, this includes the Energy Commission updating the demand forecast in even-numbered years using the most recent economic and demographic assumptions and an additional year of actual data. In even numbered years the California ISO will perform system, flexibility, and local area studies, which will be used as inputs to the LTPP.

- DR policy and planning: The California ISO initiated a DR and energy efficiency roadmap while the CPUC began a new DR rulemaking with the two organizations participating in each other's proceedings as well as collaborating informally.
2. *What are the potential benefits of increased coordination with other system operators in the Western United States?*

The California ISO has been working with one of the largest utilities in the Pacific Northwest, Portland-based PacifiCorp, and the region's stakeholders to expand the ISO's real-time market to non-ISO market participants, which will launch in October 2014. By taking advantage of the larger pool of resources across a broader geographical area, energy imbalance market (EIM) is a valuable tool to improve renewable integration. EIM shows demonstrable cost savings for customers in both balancing areas that start initially at \$21 million per year and could grow to \$129 million per year. Benefits include efficiencies due to automated dispatch and improved access to resources across the region in real-time, reduced need for flexibility reserves, and also reduced generating resource curtailments. The EIM will enable the EIM entities and the California ISO to use the ISO market and modeling systems to better optimize combined balancing areas. It will use the California ISO's existing state-of-the-art computers and market and scheduling software to automatically dispatch the combined resources every five minutes. By using the existing system platform, the EIM provides a low cost-of-entry and also is low risk because there are no exit fees. The EIM is open to any western balancing area on a pay-as-you-go basis and could go live in 2015. NVEnergy based in Nevada has announced its intent to join EIM this year.

Meanwhile, the California ISO has been actively engaged with ColumbiaGrid, Northern Tier Transmission Group, and WestConnect, the other organizations representing the rest of the western interconnection to implement Federal Energy Regulatory Commission Order No. 1000 to improve regional and inter-regional transmission planning process coordination and cooperation. While the regional portion of Order 1000 addresses regional aspects of coordination, the interregional portion of the Order addresses coordination among the four planning regions including data coordination, planning evaluation, project selection, and allocation of costs for proposed new interregional transmission projects. In fact, the key to Order 1000's interregional success lies with the four planning regions developing a robust process for annual exchanges of interregional information and data, joint evaluations of interregional transmission projects, and implementing regular coordination activities among themselves. To facilitate stakeholder engagement, the four planning regions will hold at least one joint stakeholder meeting each year to provide stakeholders with an opportunity to provide input into the interregional coordination process.

In 2013 all four planning regions developed a joint approach to implement the interregional requirements established by Order 1000. This joint approach was filed with the Federal Energy Regulatory Commission in mid-2013 and is awaiting action.

In addition, the California ISO increased interaction and cooperation with its other balancing authorities in California so that the California ISO now has access to greater regional grid data.

This data has been included in the California ISO's full network model and real-time monitoring systems, which will enable it to see what is happening on neighboring systems and operate its grid accordingly. Benefits include better management of unscheduled flows and better modeling of expected power flows in the California ISO's day ahead models, which should decrease real-time congestion imbalance offset costs and exceptional dispatches.

Questions for the Energy Commission

1. *The CEC's 2013 Integrated Energy Policy Report (IEPR) notes that in order to ensure progress toward the state's 2050 greenhouse gas reduction goals, "California needs to determine what the electricity system should look like in 2030 as an interim target." How can the state accomplish this goal? What are your recommendations?*

Please see the response to question 4 about the process for developing interim targets. With respect to what the electricity system should look like, in 2012 the Energy Commission adopted the following vision as part of an investment plan for clean energy in California: ²¹

"California's future electricity system will consist of near zero net energy buildings, highly efficient businesses, low carbon generation, sustainable bioenergy systems, more localized generation, and electrification of transportation, supported by a highly flexible and robust distribution and transmission infrastructure."

This vision could be expanded to allow for a future that includes more significant use of hydrogen or possibly biofuels in addition to electrification of the transportation sector. Also, further emphasis is needed on increasing efficiency in existing buildings, especially rented space, as zero net energy for new construction will be a small fraction of total housing in 2030 and even 2050.

In the electricity sector, energy efficiency gains are needed and energy production must be highly decarbonized by 2050. Demand-side efforts include increased energy efficiency, DR, and CHP. In addition to benefits such as reducing costs and criteria pollutants, lowering energy demand reduces the state's burden to develop non-GHG emitting energy sources to meet its energy needs. Options to decarbonize electricity generation include: renewable energy generation, geothermal energy generation, renewable distributed generation, solar space and water heating, natural gas coupled with carbon capture utilization and storage, and nuclear energy. Electricity generation will likely rely heavily on renewable resources, but other low-GHG solutions could also be considered for the 2050 timeframe, including nuclear and even fusion.

2. *In the 2013 IEPR, the CEC discusses the challenges posed as the state's energy organizations work to finalize a report in 2014 for Southern California electricity reliability, noting that*

21 California Energy Commission, *Application of the California Energy Commission for Approval of Electric Program Investment Charge Proposed 2012 Through 2014 Triennial Investment Plan*, November 1, 2012. http://www.energy.ca.gov/research/epic/documents/final_documents_submitted_to_CPUC/2012-11-01_EPIC_Application_to_CPUC.pdf.

although a strong consensus exists, “each organization is subject to its own decision-making processes within its own policy framework.”

The 2013 IEPR points out that while Commissioners, Board Members, and agency executives are working in close cooperation to resolve reliability issues in Southern California, numerous activities are required from individual agencies to achieve the desired resource additions. The following is a summary of these activities (these issues are discussed in more detail in Section III):

- *Air Quality Permits:* The AB 1318 draft final report concluded that “...the SCAQMD presently has an adequate amount of credits in its internal offset bank to repower all of the existing utility boiler OTC capacity affected by the State Water Board Policy with compliance dates through 2020.”²²
- *Gas-Fired Power Plant Permitting:* The Energy Commission will need to permit thermal power plants 50 MW and larger identified as needed to replace OTC capacity. The Energy Commission is also exploring a contingency permitting process in the event one of several conditions is triggered, such as the failure of preferred demand-side policies to develop savings in the amounts or at the locations required, or a transmission system upgrade project fell too far behind schedule to alleviate local reliability needs.
- *Procurement Authority:* The CPUC establishes the procurement authority for the IOUs. In 2014, the CPUC authorized SCE and SDG&E to enter into contracts to bring new preferred and conventional resources online to address OTC and San Onofre retirements.
- *Development and Authorization of Demand-Side Policies:* The CPUC, the Energy Commission, and the California ISO are developing the design and funding for incremental energy efficiency, combined heat and power, and DR programs that will provide the needed savings at specific points in the electricity system. While energy efficiency and DR can clearly reduce generation requirements, specific qualities such as location, level of anticipated reduction for base loads, and permanency are crucial for determining actual reductions in capacity needed in specific local areas.
- *OTC Compliance Date Revision:* The SWRCB’s adopted OTC policy includes provisions that could allow modifications of compliance dates if the energy agencies recommend delays due to reliability concerns.
- *Analytic Studies:* The Energy Commission, CPUC, and California ISO routinely update various planning studies on an annual or biennial cycle. Continuously updating these

22 California Air Resources Board in Consultation with the Energy Commission, California ISO, CPUC, SWRCB, and Los Angeles Department of Water and Power; *Assembly Bill 1318: Assessment of Electrical Grid Reliability Needs and Offset Requirements in the South Coast Air Basin*; Draft Final Report; October 2013; http://www.arb.ca.gov/energy/esr-sc/ab1318DR/ab_1318_draft_final_report_oct_2013.pdf

analyses provides an opportunity to incorporate new assumptions and modeling techniques for preferred resources that may not have been feasible to date.

- *Progress to Plan:* The Energy Commission will track the progress of various implementation items contained in the plan and will initiate contingency actions as necessary.

Thank you for the opportunity to respond to the Little Hoover Commission's questions.

Sincerely,

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